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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,767	02/25/2002	Shumpei Yamazaki	740756-2443	9406

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EXAMINER

NGUYEN, THANH T

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,767

Applicant(s)

YAMAZAKI ET AL.

Examiner

Thanh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 9-16, 23, 24 and 26-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-8, 17-22, 25 and 49-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4, 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 1-5, 9-16, 23-24, 26-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention of Species I, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119 (a)-(d).

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 6-8, 17-22, 25, 49-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (U.S. Patent No. 5,643,826).

Referring to figures, teaches a method of manufacturing a semiconductor device, comprising the steps of:

Adding a metal element (Ni, see col. 12, lines 14-27, as claimed in claims 25, 64, 76) to an amorphous semiconductor film (203, as claimed in claim 79),

Irradiating the first crystalline semiconductor film (204, see col. 12, lines 25-32, as claimed in claim 80-81) with a laser light to form a second crystalline semiconductor film having a warp (It is noted that irradiate the layer will cause the layer having a warp),

Etching the second crystalline semiconductor film () to form a crystalline semiconductor island (see col. 12, lines 33-38),

Second heating the crystalline semiconductor island at a higher temperature than the first heating step to lessen the warp (see col. 12, lines 56-67)

Regarding to claims 17, 56, 68, annealing furnace is used in the second heating step (RTA, see col. 12, lines 54-67, It is known in the art that heating step is done in the furnace to prevent the contamination).

Regarding to claims 18, 57, 69, lamp light is radiated in the second heating step (see col. 12, lines 45-67).

Regarding to claims 20, 59, 71, lamp light is radiated from at least one selected form the group consisting of an upper side and lower side of the substrate (see col. 12, lines 56-62).

Regarding to claims 21, 60, 72, lamp light is radiated from halogen lamp (see col. 12, line 54).

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Regarding to claims 49, 54, 66 excimer laser (see col. 10, lines 37-40).

Regarding to claims 50, 67 the laser light has a rectangular or linear shape. The shape of the light does not make the device function different therefore it would have been obvious to form the laser light has a rectangular or linear shape as a design choice.

Regarding to claims 51, 62, 74, form the amorphous layer by using the LPCVD (see col. 5, lines 47-50).

Regarding to claims 53, 55, 77, It is obvious to one of ordinary skill in the requisite art at the time of the invention was made to form a semiconductor device as claimed above to use as display or camera or computer or telephone.

The temperature range, the time range, the rate of heating are considered to involve routine optimization while has been held to be within the level of ordinary skill in the art. As noted in *In re Aller 105 USPQ233*, the selection of reaction parameters such as temperature and concentration would have been obvious:

“Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art...such ranges are termed “critical ranges and the applicant has the burden of proving such criticality.... More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”

In re Aller 105 USPQ233, 255 (CCPA 1955). See also In re Waite 77 USPQ 586 (CCPA 1948); In re Scherl 70 USPQ 204 (CCPA 1946); In re Irmscher 66 USPQ 314 (CCPA 1945); In re Norman 66 USPQ 308 (CCPA 1945); In re Swenson 56 USPQ 372 (CCPA 1942); In re Sola 25 USPQ 433 (CCPA 1935); In re Dreyfus 24 USPQ 52 (CCPA 1934). Therefore, one of ordinary skill in the requisite art at the time the invention was made

would have used any temperature range, the time range, the rate of heating range suitable to the method in process of Ohtani et al. in order to optimize the process.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (703) 308-9439, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 7:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, can be reached on (703) 308-4940. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956 (**See MPEP 203.08**).



Thanh Nguyen
Patent Examiner
Patent Examining Group 2800

TTN